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ABSTRACT

One of the most widely used instruments for assessing concerns has been the Stages of Concern Questionnaire (SoCQ) developed by the Concerns Based Adoption Model Project. In this research, different aspects of the validity of a modified version of the SoCQ produced for use with preservice teachers (PSSoCQ) are examined. In all, 10 different research questions were posed. For each question, methods, results and a discussion are presented. Figures include a data summary; a comparison of PSSoCQ with an open-ended instrument; correlation matricies; graphs of the progression of preservice concerns for the two groups over a year, and over the six stages of concern; and a comparison of the norms of preservice and inservice teachers by stage. (CW)

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LIMITATIONS OF A MODIFIED STAGES OF CONCERN QUESTIONNAIRE FOR USE WITH PRESERVICE TEACHERS

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INTRODUCTION

As primary agents involved in reform and innovation in preparation programs, teacher educators require ongoing evaluations of the impacts of change. One dimension of impact, identified by Frances Fuller in the late sixties (Fuller, 1969), is that of change in preservice teachers' concerns as they progress through their training and early experiences. Underlying her investigations was the recognition that preservice teachers frequently regarded their education coursework as irrelevant and of minimal value. Fuller suggested that this could be due to students' lack of motivation because their concerns were not addressed in coursework. Examination of preservice teachers' concerns led Fuller to a basic construct of a developmental progression from self to task to impact concerns (Fuller, 1969).

Several instruments for assessing concerns were devised in the years following. One of the most widely used has been the Stages of Concern Questionnaire (SoCQ), developed by the Concerns Based Adoption Model Project at the Research and Development Center for Teacher Education, University of Texas at Austin (Hall, George, & Rutherford, 1986). Used as a means of tailoring assistance and training efforts for inservice teachers, it is easily administered and scored and produces detailed data. The SoCQ has also found some use in research studies of preservice teachers (Barnes & Huling-Austin, 1984; Malone, 1984).

This history led to a pilot study in 1986-87 by the authors. The SoCQ was administered to preservice teachers from a traditional, four-year undergraduate program and a fifth-year, post-baccalaureate program at the beginning and at the end of their student teaching semester. The results of this pilot study (O'Sullivan & Zielinski, 1988), and the reservations expressed in the earlier studies cited (Barnes & Huling-Austin, 1984; Malone, 1984) and in related studies (Adams, Hutchinson, & Martray, 1980; Cooperstein, 1981; Reeves & Kazelskis, 1985), prompted this study's in-

depth examination of a slightly modifed version of the SoCQ as an instrument for assessing concerns of preservice teachers.

OVERVIEW OF THE STUDY

The purpose of this study was to explore the validity of a slightly modified version of the Stages of Concern Questionnaire for use with preservice teachers. The following questions defined the aspects of validity examined:

1. Do preservice teachers interpret statements according to intended meaning?
2. Do persons conversant with the SoCQ perceive the revised statements as consistent with the original statements?
3. Do preservice teachers categorize statements by intended stages?
4. Do stage scores on revised and original instruments concur?
5. Do responses on the revised instrument and an open-ended instrument concur?
6. Do responses to the revised statements correlate within stages?
7. Do responses to the revised statements factor into the SoCQ stages?
8. Are differences between samples and their changes over time detected?
9. Do local norms on the revised instrument concur with SoCQ norms?
10. Does the revised instrument demonstrate test-retest reliability?

Different procedures were used to address each of these questions. While the results of all have contributed to a composite judgement of validity, the number of questions and procedures for data collection and analysis require that each be treated separately in this report. Therefore, following the descriptions of the revised instrument and the subjects, the reader finds ten distinct sections, with methods, results, and discussion for each question/procedure. The report concludes with a summary of the implications of the findings as a whole.

THE REVISED INSTRUMENT

The instrument used in this study, hereafter referred to as the PSSoCQ for Preservice Stages of Concern Questionnaire, was a slightly modified version of the

SoCQ. The number of items (35) and the scoring (from 0 for "irrelevant" to 7 for "very true of me now") were retained. Six items were not changed in any way; 14 were changed only in substituting "student teaching" for "innovation;" the latter is standard procedure in the use of the instrument. For the remaining 15 items, slight alterations were made in phrasing, most of which involved substituting "student teaching" for a phrase referring to innovation in general terms. The sequence was left unchanged. The standard formats, as given in the SoCQ manual (Hall et al, 1986), were used for the directions and for the two pages of statements.

SUBJECTS

A total of 92 subjects from a fifth-year graduate teacher preparation program at an urban state university, enrollment approximately 23,000 in a city of 650,000, and a total of 100 subjects from a four-year undergraduate teacher preparation program at a rural state university, enrollment approximately 6,100 in a community of 6,000, were used in various parts of the study. Separate groups, reflecting intact classes in various course sections, were used for different procedures; subjects from both universities participated in each procedure. With the exception of the repeated measures addressing question 8, "Are differences between samples and their changes over time detected?", no single subject participated in more than one part of the study.

The subjects from the fifth-year program averaged 33 years of age and 3.3 in overall GPA. Over 90% were classified as "other white." Many were married and many had children. All were preparing to be middle or high school teachers and their subject areas ranged across all disciplines. Their professional education program for the preliminary credential was usually completed within two semesters and included 15 credit hours of on-campus coursework and 17 credit hours of observation and student teaching. Approximately 100 hours of observation in the classrooms of their future supervising teachers occurred in the semester prior to approximately 180 hours of

student teaching. The latter commenced with full instructional responsibility on the first day of the school's semester and continued until the end of the school's semester. The schools were urban or suburban; student ethnicity was mixed in all and some student bodies were predominantly non-white.

The subjects from the undergraduate progrm averaged 23 years of age and 3.0 in overall GPA. Over 95% were classified as "other white." Few were married and few had children of their own. Some were preparing to be elementary teachers and others middle or secondary science teachers. Their professional education program was distributed throughout their four-year baccalaureate program and included 21 credit hours of on campus coursework and 15 credit hours of observation and student teaching. Approximately 36 hours of observation, often not with their future supervising teachers, occurred during the semester prior to approximately 360 hours of student teaching. Instructional responsibility was gradually assumed during the latter. The schools were rural and their student bodies were predominantly white.

QUESTION/PROCEDURE 1

"Do preservice teachers interpret
statements according to intended meaning?"

Preservice teachers' interpretations of the statements were assessed for consistency with stage definitions. Ten subjects each from the undergraduate and fifth-year programs were interviewed during the week following their completion of the PSSoCQ (early during the semester prior to student teaching). Each subject responded to questions about seven items, one from each of the seven postulated staes: "What did you understand this statement to mean?" and "Why did you respond this way?" (referring to subject's response on the scale from irrelevant to very true of me now). Over all 20 subjects, each item was addressed four times. Interviews were audiotaped for later, independent scoring by the two researchers.

To reduce the subjectivity in interpretation and to quantify the responses, the

responses were scored as yes or no on three points: understanding of the statement with regard to stage, responding as subject intended on the scale, and expressing confusion. Interscorer reliability was calculated as percentage of agreement on sixty possible points per stage: four subjects per item, three points per item, five items per stage. The same procedure was used to calculate the percentage of problem points; problems were counted whether identified by just one or both scorers. The percentage of students with problems within stages was treated separately; this calculation was based on four students responding to each of five items per stage: number of students with problems/(4x5).

For ease of comparison with results on other procedures, the reduced data reported in Figure 1: Summary Data Table, are reported as percentages of "no problems" (first value given) and "subjects with problems" (second value given). Individual items identified as particularly problematical are also noted in this data table.

On 352 of 420 points of assessment, or 84% over all seven stages, there were no problems in interpretation for this interviewed group. The percentage of subject responses without problems was not as high, 66%. Both ways of examining the data revealed that the latter stages were more problematical than the earlier stages. While there appears to be some difficulty in subjects' understanding of the items, of more import were the differences between the stages and the identification of particular items; this was seen again in later procedures.

Overall agreement between the two scorers of the interviews was 88% and ranged from a low of 83% to a high of 93%. One scorer tended to be slightly more discerning of problems and both scorers found more problems in the fifth-year subjects.

QUESTION/PROCEDURE 2

"Do persons conversant with the SoCQ perceive the revised statements as consistent with the original statements?"

Persons conversant with the SoCQ were asked to review the revised version

(PSSoCQ). In one task, six reviewers assigned the 35 revised statements to the seven stages. The items were listed in the order they appear on the instrument and stage descriptions from the SoCQ manual (Hall et al, 1986) were provided. In a second task, five reviewers compared and commented on all 35 pairs of statements from the SoCQ and PSSoCQ. All responses were written, with the procedure being conducted via the mails; follow-up conversations with four of the six respondents were conducted for clarification of some responses.

For the responses to the first task, stage assignment, the percentage of "correct" responses was calculated. For the second task, involving perceived differences, the percentage of "no difference" responses was calculated. The averages for the seven stages on both tasks are reported in Figure 1: Summary Data Table; the first value given is for task one, the second is for task two. Also reported are items with overall low response percentages.

As with the first procedure, preservice teachers' interpretations of statements, the results differed among stages. Stage 2/Personal was the most problematical, closely followed by Stage 1/Informational, Stage 5/Collaboration, and Stage 6/Refocusing. The assignment to stage was also low for Stage 3/Management, although no reviewer commented on differences in meaning for any of the five items. Eleven items appeared as especially problematical, either in misassignment or comments on differences.

In comparing the results from these first two procedures, it can be seen that while the stages were differentially problematical for the two groups, both groups identified seven items as particularly problematical. This agreement strongly indicated a need to reexamine these items. The differences between stages for the two groups could indicate a difference in the two groups' interpretations of the constructs of the stages.

QUESTION/PROCEDURE 3

"Do preservice teachers categorize statements by intended stages?"

An open-ended sorting task was presented to 25 subjects in the fifth-year program to explore how they would group the 35 items and how they would define these groups. All subjects received a set of items, each appearing on a separate slip of paper, and a tally sheet to record which items were grouped together and a description for each group. The directions stated that the number of groups and the number of items per group were up to the individual respondent. The subjects completed the task within approximately 30 minutes.

The open-ended nature of this procedure precluded a simple reduction of the data gathered; each response was unique. The ultimate value of this data probably resides in this diversity, as a source base for possible redefinition of stages (or their constructs) and for generation of new items. Such an endeavor was beyond the scope of the present study. Some trends were discerned in examining the responses, however, which have some implications here.

The simplest way to examine the data was to count the number of categories identified by the subjects. The modal value was seven categories (7 subjects), with a range from three categories (2 subjects) to twelve categories (1 subject). Five categories and six categories were each identified by six subjects. Thus, there was a tendency to identify somewhat fewer than the "assigned" seven categories (stages).

Subjective interpretation of the definitions provided by the respondents suggested some overall patterns. First, Stages 0/Awareness, 1/Informational, and 2/Personal tended to be confounded; that is, the subjects tended not to distinguish these as three separate stages. For example, seven subjects lumped most of the items of these stages within a single category. An alternative hypothesis here, given that the respondents were in the middle of their student teaching and supported by the use

of phrases such as "no longer relevant" and "do not apply," was that subjects didn't bother to distinguish among statements that had little current meaning to them.

Second, Stages 3/Management and 4/Consequence were quite clearly defined. Most of the items were "correctly assigned" and the categories more or less obviously described. Only three subjects did not develop a category for each of these stages. For Stages 5/Collaboration and 6/Refocusing, the results were similar, but not quite as clear cut. These results were in accordance with the developmental construct underlying the stages and the subjects' position in time with regard to student teaching.

QUESTION/PROCEDURE 4

"Do stage scores on revised and original instruments concur?"

Twenty subjects from the fifth-year and twelve from the undergraduate samples completed the PSSoCQ and then the SoCQ on the same day, with a two to three hour interval between completions. Pearson product-moment correlation coefficients were calculated on scores for each of the seven stages; these appear in Figure 1: Summary Data Table. Values are for the combined groups, N = 32.

While the coefficients were low for Stages 0/Awareness, 1/Informational, and 2/Personal, all were significant at the .01 level. The coefficients were within acceptable range for Stages 3 through 6.

The PSSoCQ appeared to elicit responses similar to those on the SoCQ for Stages 3 through 6, but not for Stages 0, 1, or 2. Here again, as with earlier procedures, these early stages were problematical.

QUESTION/PROCEDURE 5

"Do responses on the revised instrument and an open-ended instrument concur?"

Different subjects (from procedure 4), 28 from the fifth-year and 25 from the undergraduate samples, completed the Open-ended Statement of Concern measure (Newlove

& Hall, 1976) and then the PSSoCQ on the same day, with a two to three hour interval between completions. Administration took place during the early part of the semester prior to the student teaching semester. Copies of responses on the Open-ended measure were made and exchanged by the two authors for independent scoring.

Scoring procedures followed guidelines in the manual (Newlove & Hall, 1976). Stages assigned to the responses of each subject by the scorers were compared for the predominating stage reflected by the response and the second stage reflected. Simple percentages of agreements between scorers on each of these and a percentage of agreement without regard for order (predominating or second) are reported in Figure 2: Comparison of Open-ended and PSSoCQ Instruments. The assigned stages were compared to the highest and second highest scores, both raw and percentile (from SoCQ norm tables), on the PSSoCQ. Simple percentages of agreements between scores, without regard for order, are reported separately for the raw and percentile PSSoCQ scores and separately for both scorers in Figure 2.

The agreement between stages identified on the Open-ended measure and the two highest scores on the PSSoCQ was approximately 50%. Percentage agreements with the raw and percentile scores were similar, and these were likewise similar for the two scorers. (Because the percentile scores were taken from the SoCQ norm tables, raw score comparisons were provided; use of these norms made little difference--see procedure 9.) Agreement between the two scorers was high (89%) for the predominating stage, but low (51%) for the second stage.

In tabulating the raw data it was noted that Stage 2/Personal was identified in the responses on the Open-ended measure for all subjects by one scorer and for all but three by the other scorer. On the PSSoCQ, Stage 2 scores were not among the highest for 23% of the subjects using percentile scores (32% using raw scores). Recall that administration took place early in the semester prior to the student teaching semester.

High personal concerns at this point in time are predicted by the theory. While the responses on the Open-ended measure supported this, those on the PSSoCQ did not do so as clearly. Nor was the agreement between the two measures high. Some of this discrepancy can be attributed to the nature of the Open-ended instrument, but it also raised doubts about the PSSoCQ's sensitivity in this area.

QUESTION/PROCEDURE 6

"Do responses to the revised statements correlate with stages?"

PSSoCQ responses from 192 subjects were used to construct an item by item correlation matrix. Administration to 172 subjects (92 from the fifth-year group, 80 from the undergraduate group) was at the beginning, middle, and end of their student teaching year; approximately equal numbers of responses came from each administration time. An additional 20 subjects from the undergraduate program completed the PSSoCQ during their first education course. The SAS correlation subroutine was used.

Figure 3 is the complete correlation matrix, showing all inter-item correlations and averages of correlations between the set of five items in each stage. While the overall trend was toward higher correlations between items within stages, there were a number of very low correlations within stages. In addition, the average correlation for Stage 2 items with themselves (.29) was lower than that with Stage 1 (.33). The same held for Stage 3 with Stage 2 (.20 and .21), although neither difference was large.

Figure 4 shows the best correlations for each item. Most of the items in Stages 0/Awareness, 1/Informational, and 2/Personal correlated more highly with items in adjacent stages than they did with items within the same stage. The correlations for Stage 3/Management were even more removed in three instances. The situation for Stages 4/Consequence, 5/Collaboration, and 6/Refocusing was quite different, with the highest correlations occurring within stage for most items. Again with this

procedure, differences among the stages appeared, and several of the same items were especially problematical.

QUESTION/PROCEDURE 7

"Do responses to the revised statements factor into the SoCQ stages?"

The same PSSoCQ responses of subjects used in procedure 6 were used in the factor analysis of this procedure. Individual item responses were used for principal components varimax rotated factor analysis. The SAS program was used. A seven factor solution accounted for 55% of the common variance.

A comparison of the hypothesized stages with the obtained factor structure was performed. The seven stage score totals for each of the 192 subjects rather than item responses were correlated with the factor scores computed on the basis of the varimax rotated factor structure. Figure 5 represents the results of this analysis.

Stage scores were obviously highly correlated with but one factor each, indicating that items on any given scale tended to be responded to similarly. The results of this procedure strongly suggested that different constructs were being tapped by the items within the seven stages. Two of the correlations were somewhat lower, for factors 6 and 7 or Stages 1/Informational and 2/Personal; these same stages evidenced problems in the item by item correlation analysis of procedure 6.

QUESTION/PROCEDURE 8

"Are differences between populations and over time detected?"

The capacity of the PSSoCQ to discriminate differences in concerns between the two samples and to detect changes in their concerns over time was assessed by examining responses over the course of two semesters, the second of which was the student teaching semester. Fifth-year subjects (N = 36) and undergraduate subjects N = 15) completed the PSSoCQ near the beginning of the year, at the beginning of student teaching, and at the end of student teaching. Averaged profiles for both

groups at each of the three administrations were made using raw stage scores; these appear as Figures 6 and 7.

The overall shapes of the profiles, both within groups and between groups, were quite similar; as both groups were at equivalent points in their preparation programs, this was not surprising. The decreases in Stages 1/Informational and 2/Personal over the course of the year were strikingly similar in pattern and magnitude; these changes fit well with concerns theory as well. While both groups also showed a decrease in Stage 3/Management concerns, also consistent with theory, these concerns were higher throughout the year for the fifth-year group. The demographic differences which may pertain were the urban/suburban setting and ethnically mixed students of the fifth-year student teachers as contrasted with the rural setting and predominantly white students of the undergraduate student teachers. This difference was pertinent to the Stage 4/Consequence concerns shown here, also. These were high, usually peak concerns for both groups. But for the fifth-year group, the intensity diminished slightly over time, whereas for the undergraduate group, the intensity increased somewhat over time. Perhaps the fifth-year group had more experience in coping with consequences with students, even though concerns remain high.

A similar pattern for the two groups was seen for Stage 5/Collaboration and, though less clearly, for Stage 6/Refocusing. Most collaboration for both groups occurred with their supervising teacher(s), but the undergraduate group had less time with these teachers prior to student teaching and returned their classes to them at the end of student teaching. The fifth-year group, in contrast, spent many hours the semester prior to student teaching in their supervising teachers' classrooms and taught their classes through the end of the school (not university) semester.

The profiles of these two disparate groups of student teachers indicated that the PSSoCQ was capable of distinguishing between them and of detecting differences over time. While there were some anomalies in the data with regard to concerns theory,

there was fairly good consistency overall. It would certainly be pertinent to consider the length of the experience ("treatment") and its multiple and intense impacts on these student teachers.

QUESTION/PROCEDURE 9

"Do local norms on the revised instrument concur with SoCQ norms?"

The same set of responses from the 192 subjects used in procedures 6 and 7 were used to compute norms for these student teacher samples. Total stage scores were used to calculate the percentiles by stages. Separate norms were calculated for the fifth-year and undergraduate groups; these results are graphically compared to the SoCQ norms in Figures 8 through 14. The norms for the two groups combined are compared with the SoCQ norms in tabular format in Figure 15.

Very little difference among norms appeared for Stages 0/Awareness, 4/Consequence, 5/Collaboration, and 6/Refocusing. The fifth-year norm for Stage 1/Informational indicated a slightly lower level of concern; the undergraduate group's norm did not vary significantly from the SoCQ norm. Both groups tended to show a somewhat higher level of concern on Stage 2/Personal; once again this stage was pinpointed. The fifth-year norm for Stage 3/Management showed a somewhat higher level of concern; there was less difference between the undergraduate and SoCQ norms. Recall the differences between the two student teacher groups in the profile data from procedure 8: fifth-year management concerns were consistently higher than undergraduates'.

Overall, there did not appear to be any large differences in norms among the three groups. The small differences were consistent with results from other procedures.

QUESTION/PROCEDURE 10

"Does the revised instrument demonstrate test-retest reliability?"

The PSSoCQ was administered on two occasions, one week apart, to 17 subjects from the fifth-year and 21 subjects from the undergraduate programs. Administration took part during the early part of the semester prior to the student teaching semester. Pearson product-moment correlation coefficients were calculated on raw scores for each of the seven stages.

These coefficients appear in Figure 1: Summary Data Table. Even the highest coefficient, .73 for Stage 1/Informational, was rather low for an attitude instrument. Although all coefficients were significant at the .01 level, their low level and the differences between the two subject groups (calculated separately, but not reported here) raised a serious question about this reliability of the instrument. One could argue that rapid changes were occuring in the test groups at this time and that the one week interval was too long. The very low values for the latter Stages, 4, 5, and 6, might be mitigated by suggesting unfamiliarity with the constructs in this beginner group. And, Stage 2/Personal once again stood out, with a coefficient of just .57. In addition, the reliability coefficients reported in the SoCQ manual (Hall et al, 1986) were not overly large: .65, .86, .82, .81, .76, .84, and .71, Stages 0 through 6, respectively. The test-retest reliability of the PSSoCQ needs further study.

CONCLUSIONS

The results of these ten procedures investigating the validity of the PSSoCQ were mixed. The instrument has been shown to have limitations which require addressing before its use as a data collection tool in other research. There were some indications that the stages of concern construct underlying the instrument may be questionable as it pertains to student teachers. There were definite indications that some of the stages as currently constructed and certainly specific items were problematical for this population. The wealth of data collected and the trends evidenced by this study do, however, provide a rich source of information and directions for further research and development in this area.

The results of the factor analysis tended to support seven separate constructs. The results of the sort task also supported this, but not as strongly; although more subjects identified seven categories than any other number, six subjects each grouped the statements in five and six categories. In addition, the first three stages tended to be grouped by subjects in this sort task, had a number of high cross stage coefficients in the correlation matrix, and showed low values in the comparison to the SoCQ. The correlation coefficients for Stages 1 and 2 in the factor analysis were also lower than for the other stages, and the expert reviewers had more problems with these two stages. In opposition, the subjects in the interview procedure evidenced fewer problems with items in stages 0, 1, and 2 than with the latter three stages. Nor did the profiles of the fifth-year and undergraduate groups present questions with regard to these stages.

Most of the evidence regarding Stages 4, 5, and 6 suggested that they were not especially problematical. The factor analysis correlations were high, the correlation matrix relationships were good, the sort task data were clearcut, and the values in the comparison to the SoCQ were higher than for the other stages. However, there were more problems with these stages' items in the interview procedure and with Stages 5 and 6 items in the reviews by experts. The peaking of concerns at Stage 4/Consequence in the profiles seemed early according to concerns theory as well.

Stage 3 results were even more mixed. The factor analysis correlation was high, but in the correlation matrix two items showed high correlations with two Stage 1 items and one Stage 0 item. Interviewed subjects did not have unusual problems nor did the reviewers report any differences between SoCQ and PSSoCQ items, but the latter had a number of errors in assignment of items to this stage. The test-retest and SoCQ comparison values fell in the middle of the ranges on both. In examining the raw data, especially those involving written responses, e.g., the sort task, the authors were struck with the potential breadth and diversity of this construct for student

teachers.

In addition to these stage trends, specific items stood out again and again in the procedures. There were one or two items in each stage which presented difficulties for the interviewed and sort task students and the reviewers and which had unusual correlations in the matrix. Item 17, Stage 2/Personal is an example: "I would like to know how my student teaching is supposed to change." (The SoCQ version is: "I would like to know how my teaching or administration is supposed to change.") When considered from a student teacher's perspective and in light of the other evidence, this and the other statements pinpointed become obvious targets for revision.

All of these data indicated that further study and changes are needed. Reexamination of the data at hand and repetitions of some of the procedures with additional subjects would be the next steps in developing a more finely tuned instrument for assessing student and beginning teacher concerns. Other work in these areas could be valuable contributions to this line of investigation as well. Berliner's studies of the development of expertise in pedagogy serve to highlight important differences between beginning and competent teachers which would affect concerns (1988). The blending of content and pedagogical knowledge, addressed by Shulman (1987), is a process at the crux of learning to teach which involves the arousal and resolution of many concerns. The interplay of empirical data and theory from a variety of sources can lead to rich results. And, the potential uses of such an instrument merit continued development: identifying areas of high concern would be useful to those who work directly with student teachers; evaluating the impact of program changes on clients in this era of reform in teacher education is needed; and comparing programs has been and will continue to be an area of research in teacher preparation.

Figure 1
SUMMARY DATA TABLE

STAGE NAME AND NUMBER	INTERVIEWS WITH STUDENTS	REVIEWS BY PANEL OF JUDGES	SoCQ vs PSSoCQ COMPARISON	TEST-RETEST RELIABILITY
0 AWARENESS	85/70	93/100	.49	.73
Problem Statements	12 & 23	(23)	-	-
1 INFORMATIONAL	88/75	73/68	.46	.60
Problem Statements	35	35	-	-
2 PERSONAL	88/75	60/72	.55	.57
Problem Statements	17	13, 17, 28	-	-
3 MANAGEMENT	90/75	70/100	.76	.67
Problem Statements	16	8	-	-
4 CONSEQUENCE	80/60	90/88	.76	.51
Problem Statements	11, 24, 32	32	-	-
5 COLLABORATION	82/55	73/76	.82	.53
Problem Statements	5, 10	5, 29	-	-
6 REFOCUSING	73/55	70/72	.71	.51
Problem Statements	2, 20, 22	2, 9, 22	-	-
OVERALL AVERAGES	84/66	76/82		

Figure 2

COMPARISON OF OPEN-ENDED & PSSOCQ INSTRUMENTS

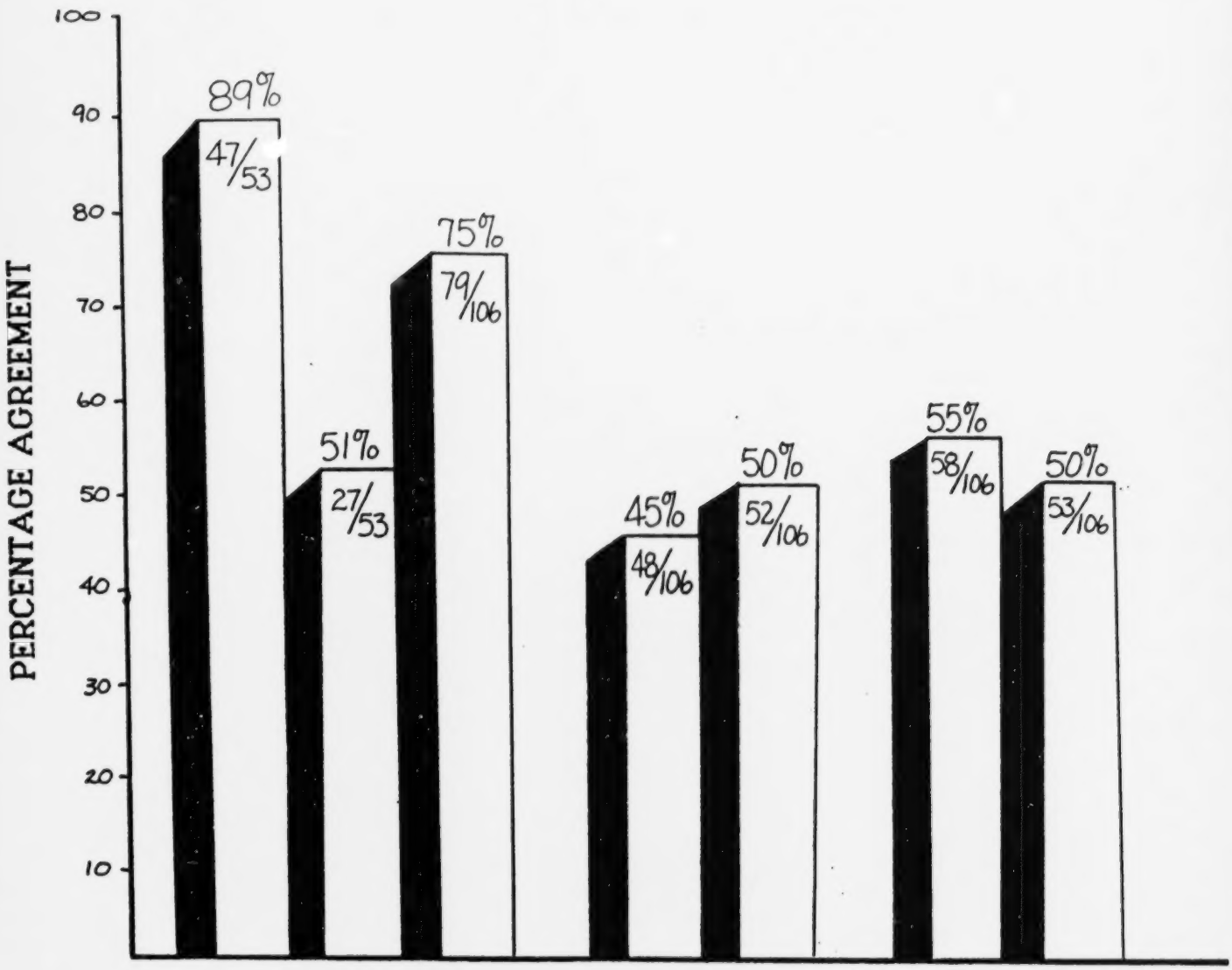


Figure 3

Correlation Matrix: By Items Within Stages

		Stage 0 Awareness					Stage 1 Information					Stage 2 Personal					Stage 3 Management					Stage 4 Consequence					Stage 5 Collaboration					Stage 6 Refocusing				
		3	12	21	23	30	6	14	15	26	35	7	16	17	28	33	4	8	16	25	34	1	11	19	24	32	5	10	18	27	29	2	9	20	22	31
Stage 0 Awareness	3	1	.16	.15	.33	.16	.47	-.26	-.26	-.23	-.19	.05	.18	.16	.31	.20	.15	.19	.24	.12	.11	.07	-.11	-.09	-.07	-.02	-.11	.01	-.02	.05	.08	-.22	.12	-.06	-.06	.06
	12		1	.26	.13	.35	.15	.18	.15	.14	.14	.20	.02	.07	.15	.17	.01	.01	.08	.11	.03	-.12	-.17	-.10	-.07	.03	-.20	.02	.02	.01	.01	-.14	.06	.12	.05	.01
	21			1	.30	.33	.33	.37	.22	.14	.26	-.05	.05	.12	.22	.22	.02	.19	.21	.02	.34	.07	-.08	-.12	-.13	-.03	-.14	.05	.05	-.00	.03	-.20	.07	.00	-.14	.01
	23				1	.38	.58	.57	.55	.52	.45	-.04	.28	.24	.52	.53	.12	.21	.40	.15	.07	.05	.09	.02	.06	-.08	-.19	.03	.08	.19	.21	-.37	-.10	-.06	-.10	-.04
	30	$\bar{x}$ = .26				1	.22	.38	.38	.32	.20	-.04	.07	.13	.35	.33	.11	.09	.19	.16	.07	.05	.01	.07	.41	.43	-.03	.07	.06	.07	.11	-.17	.06	-.03	.03	.13
Stage 1 Information	6						1	.47	.46	.43	.29	.07	.22	.27	.38	.43	.24	.23	.42	.03	.12	.05	.05	.04	.03	.02	-.24	.09	.08	.20	.31	-.37	-.03	-.03	.05	.02
	14							1	.67	.50	.31	.01	.36	.32	.46	.47	.11	.18	.38	.22	.11	.07	.13	.10	.06	.01	.01	.18	.32	.20	.28	-.26	.02	.01	.01	.08
	15								1	.60	.25	.03	.34	.21	.57	.61	.27	.16	.43	.21	.05	.06	.15	.09	.12	.06	-.02	.16	.20	.25	.34	-.27	-.07	-.03	.01	.15
	26									1	.40	.08	.32	.44	.62	.63	.23	.18	.57	.43	.08	.13	.10	.14	.20	.17	.01	.14	.33	.35	.41	-.26	.05	.09	.01	.27
	35	$\bar{x}$ = .23					$\bar{x}$ = .44				1	.04	.19	.25	.47	.43	-.01	.08	.27	.19	.32	.06	.03	.05	.09	.08	-.17	-.09	.08	.05	.22	-.19	-.02	.09	-.06	.14
Stage 2 Personal	7											1	.18	.28	.03	.06	.10	.16	.04	.08	-.05	.19	.27	.19	.21	.16	.25	.13	.25	.14	.16	.22	.03	.05	.15	.22
	13												1	.40	.35	.32	.10	.17	.24	.21	.14	.22	.23	.17	.20	.11	.14	.16	.33	.23	.28	-.00	.06	.14	.14	.17
	17													1	.33	.34	.13	.21	.47	.28	.18	.24	.36	.34	.21	.35	.13	.18	.50	.35	.32	.16	.27	.24	.36	.30
	28														1	.57	.22	.24	.44	.32	.23	.17	.13	.10	.11	.15	-.03	.09	.26	.34	.38	-.23	.09	.05	.08	.20
	33	$\bar{x}$ = .18					$\bar{x}$ = .33					$\bar{x}$ = .29				1	.29	.18	.43	.23	.14	.08	.13	.13	.10	.14	-.04	.13	.14	.21	.37	-.26	.03	.04	.03	.13
Stage 3 Management	4																1	.28	.35	.23	.12	.16	.09	.21	.02	.16	.24	.12	.01	.19	.08	-.07	.12	-.06	.27	.15
	8																	1	.35	.09	.12	.11	.06	.16	-.01	.07	.25	.10	.14	.00	.01	-.15	.18	.10	.15	.07
	16																		1	.30	.16	.11	.08	.17	.05	.14	.42	.01	.24	.19	.26	-.34	.06	.08	.14	.13
	25																			1	.03	.28	.10	.18	.25	.29	.11	.04	.22	.28	.18	.10	.16	.11	.17	.28
	34	$\bar{x}$ = .14					$\bar{x}$ = .07					$\bar{x}$ = .21					$\bar{x}$ = .20				1	.02	-.02	.07	.07	.17	.12	.04	.11	.11	.17	-.01	.16	.20	.06	.19
Stage 4 Consequence	1																					1	.46	.35	.21	.14	.05	.19	.27	.20	.13	.20	.17	.07	.22	.09
	11																						1	.53	.42	.33	.05	.30	.34	.38	.25	.17	.15	.06	.28	.17
	19																							1	.41	.43	.04	.20	.29	.35	.21	.20	.20	.15	.45	.16
	24																								1	.34	.03	.07	.27	.39	.28	.13	.15	.26	.29	.30
	32	$\bar{x}$ = .007					$\bar{x}$ = .04					$\bar{x}$ = .19					$\bar{x}$ = .12					$\bar{x}$ = .36				1	.02	.16	.28	.42	.24	.14	.29	.28	.41	.43
Stage 5 Collaboration	5																										1	.20	.35	.18	.08	.24	.13	.14	.25	.14
	10																											1	.17	.40	.24	.12	.13	.12	.24	.10
	18																												1	.35	.38	.12	.24	.37	.35	.29
	27																													1	.48	.14	.23	.18	.42	.31
	29	$\bar{x}$ = .02					$\bar{x}$ = .15					$\bar{x}$ = .22					$\bar{x}$ = .15					$\bar{x}$ = .22					$\bar{x}$ = .28				1	.01	.07	.19	.14	.35
Stage 6 Refocusing	2																															1	.16	.18	.32	.08
	9																																1	.39	.19	.22
	20																																	1	.28	.29
	22																																		1	.32
	31	$\bar{x}$ = -.04					$\bar{x}$ = -.02					$\bar{x}$ = .11					$\bar{x}$ = .08					$\bar{x}$ = .22					$\bar{x}$ = .20					$\bar{x}$ = .24				1

Figure 4

Best Correlations for Items by Items

	STAGE 0 AWARENESS					STAGE 1 INFORMATIONAL					STAGE 2 PERSONAL					STAGE 3 MANAGEMENT				
ITEM NO.	3	12	21	23	30	6	14	15	26	35	7	13	17	28	33	4	8	16	25	34
Item with highest correlation	6	30	14	6	14	23	15	26	33	28	17	17	18	15	26	16	16	26	26	21
CORR. COEF.	.47	.35	.37	.58	.38	.58	.67	.60	.63	.47	.28	.28	.50	.57	.63	.35	.35	.57	.42	.34
STAGE OF ITEM	1	0*	1	1	1	0	1*	1*	2	2	2*	2*	5	1	1	3*	3*	1	1	0

	STAGE 4 CONSEQUENCE					STAGE 5 COLLABORATION					STAGE 6 REFOCUSING				
ITEM NO.	1	11	19	24	32	5	10	18	27	29	2	9	20	22	31
Item with highest correlation	11	19	11	11	31/19	18	27	17	29	27	22	20	9	19	32
CORR. COEF.	.46	.53	.53	.42	.43	.35	.40	.50	.48	.48	.32	.39	.39	.45	.43
STAGE OF ITEM	4*	4*	4*	4*	6/4*	5*	5*	2	5*	5*	6*	6*	6*	4	4

* Indicates the items were both within the intended stage.

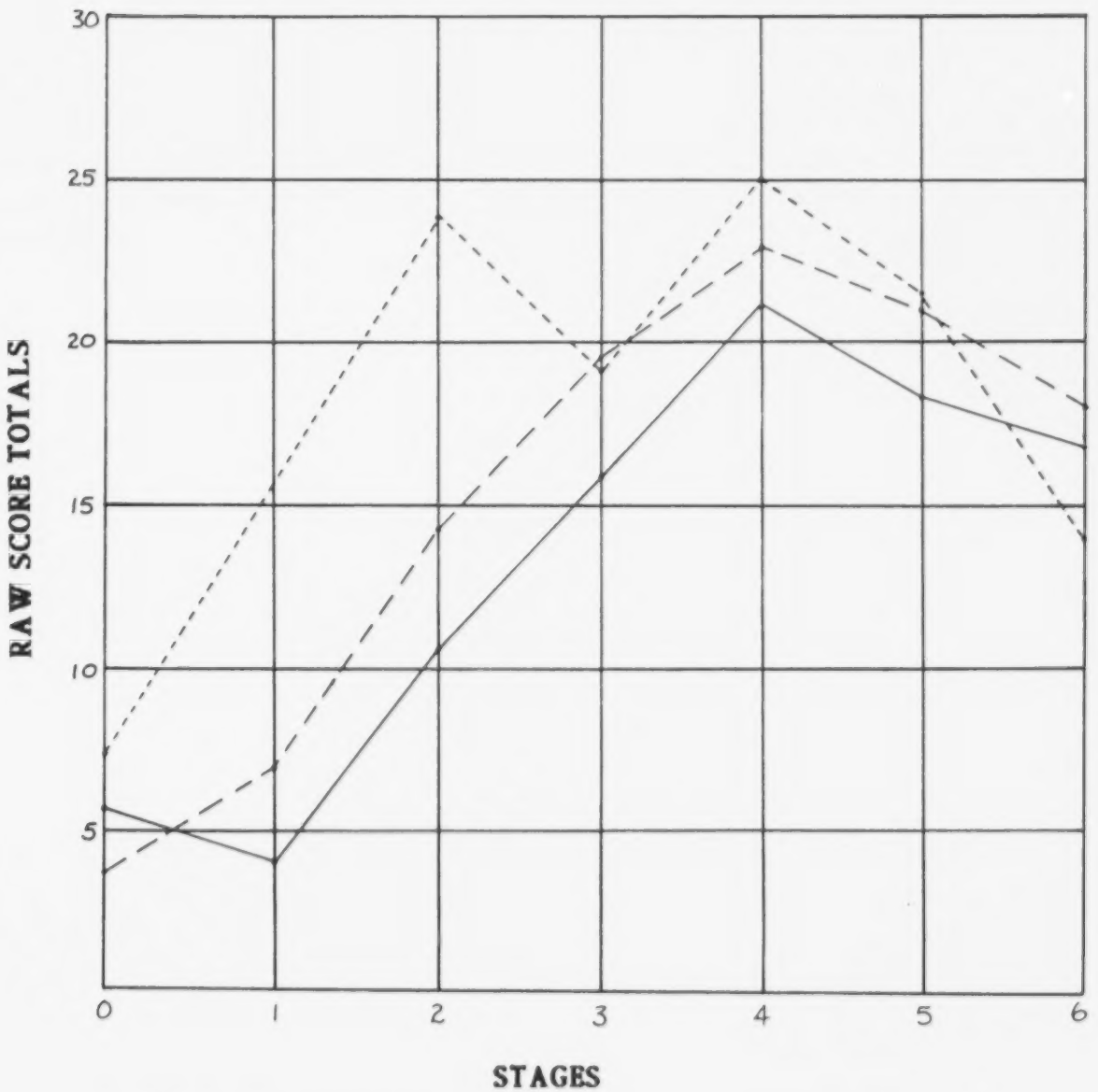
Figure 5

Correlations between factor scores and stage scores.
Analysis of 35 items with 192 respondents.

Stage	Factor 1	Factor 7	Factor 6	Factor 2	Factor 4	Factor 5	Factor 3
0	.94*	.21	.17	.16	-.04	-.00	-.08
1	.44	.77*	.35	.24	.06	.16	-.06
2	.24	.27	.84*	.26	.18	.23	.10
3	.18	.15	.20	.94*	.12	.07	.12
4	-.04	.04	.14	.12	.92*	.24	.24
5	.01	.11	.19	.07	.25	.91*	.24
6	-.08	-.04	.07	.11	.23	.22	.94*

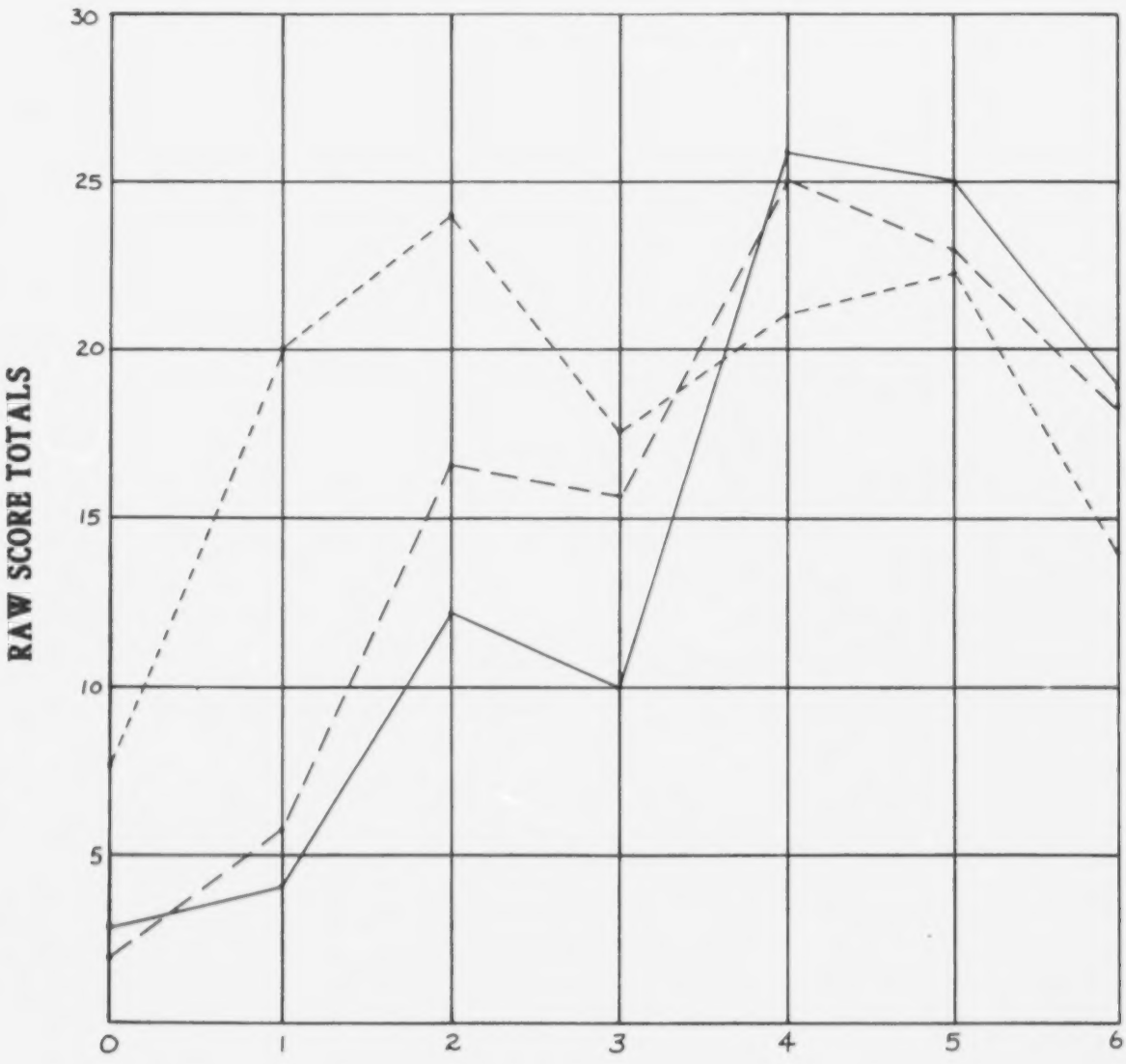
* Indicates highest stage correlation with a factor

FIGURE 6
PROGRESSION OF PRESERVICE TEACHER CONCERNS OVER ONE YEAR: FIFTH YEAR GROUP



EARLY FALL ------
BEGINNING OF STUDENT TEACHING — — — — —
END OF STUDENT TEACHING ————

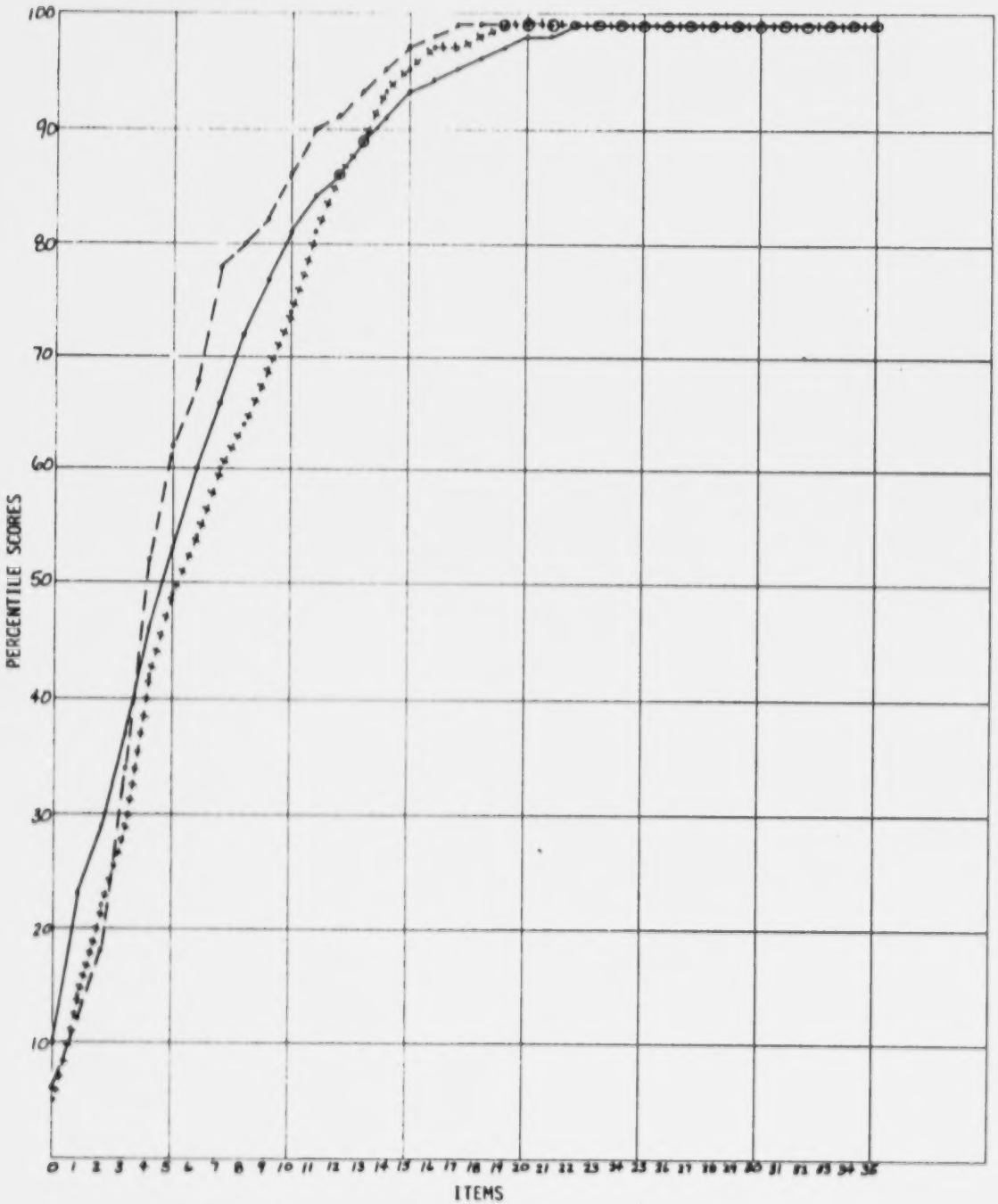
FIGURE 7
PROGRESSION OF PRESERVICE TEACHER CONCERNS OVER ONE YEAR: UNDERGRADUATE GROUP



EARLY FALL - - - - - -
BEGINNING OF STUDENT TEACHING — — — — —
END OF STUDENT TEACHING ————

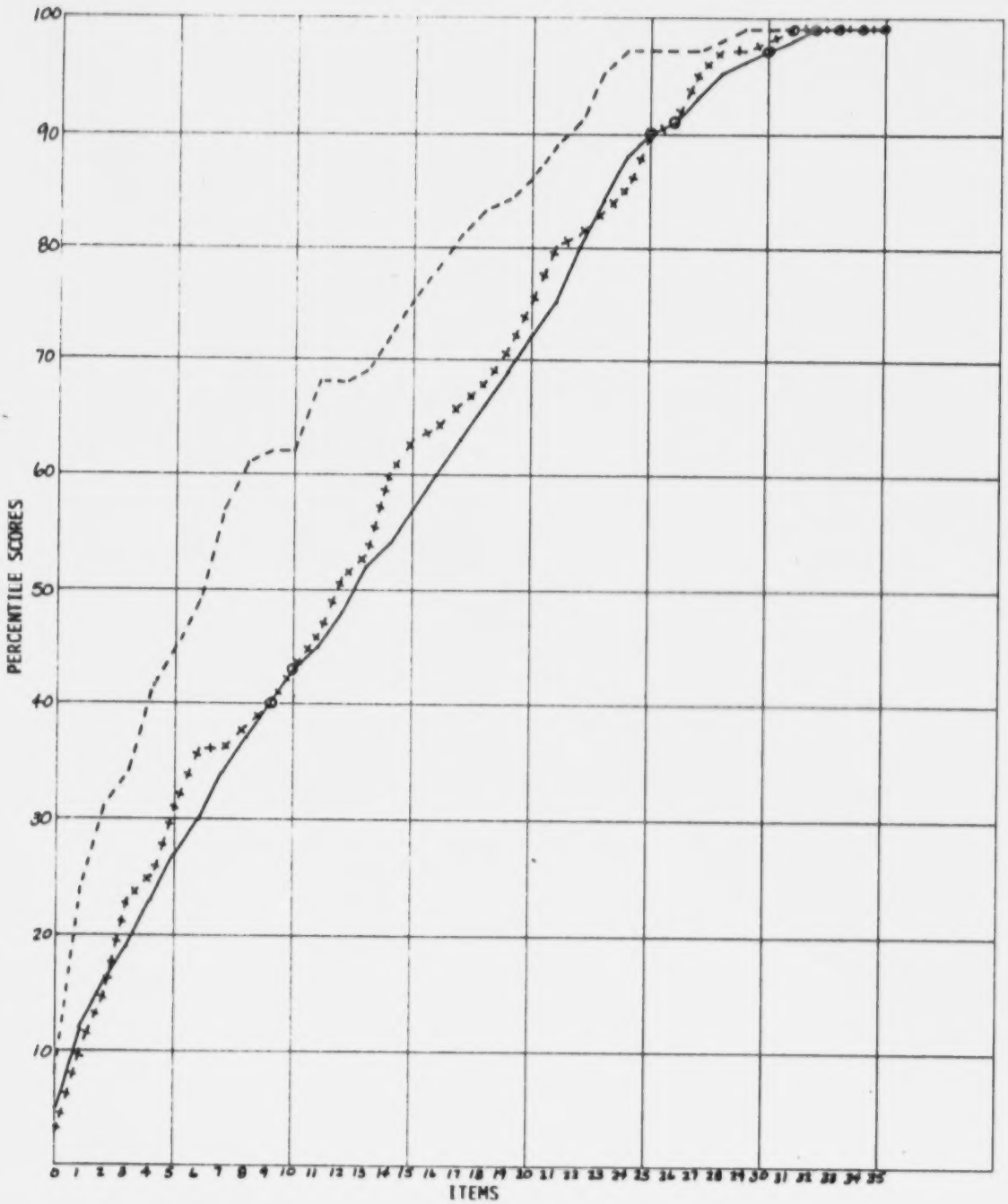
FIGURE 8

COMPARISON OF GROUP NORMS: STAGE 0 - AWARENESS



FOUR YEAR ++++ FIVE YEAR -------- SoCQ_____

FIGURE 9
COMPARISON OF GROUP NORMS:
STAGE 1 - INFORMATIONAL



FOUR YEAR ++++ FIVE YEAR -------- SoCQ_____

FIGURE 10
COMPARISON OF GROUP NORMS:
STAGE 2 - PERSONAL

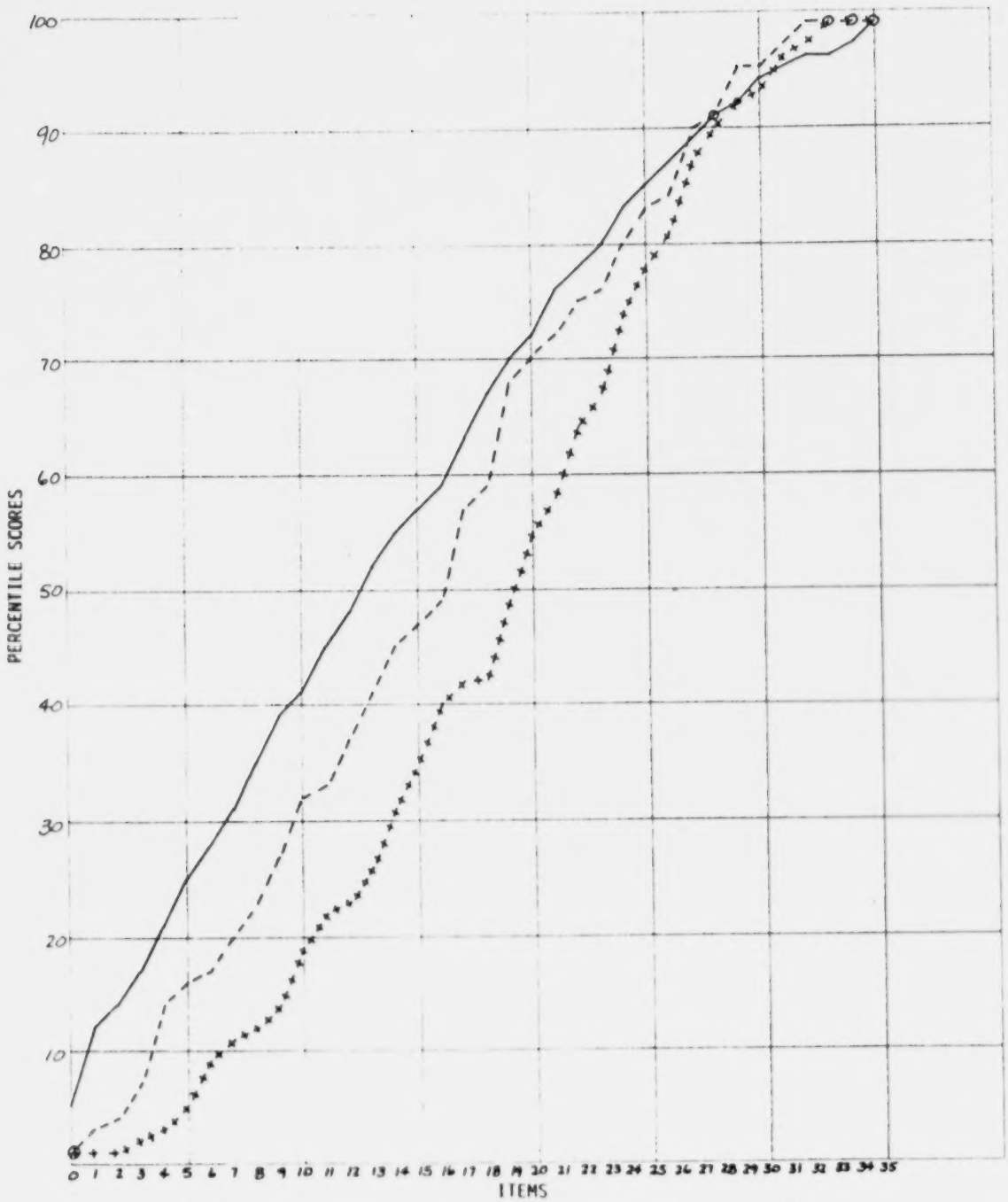
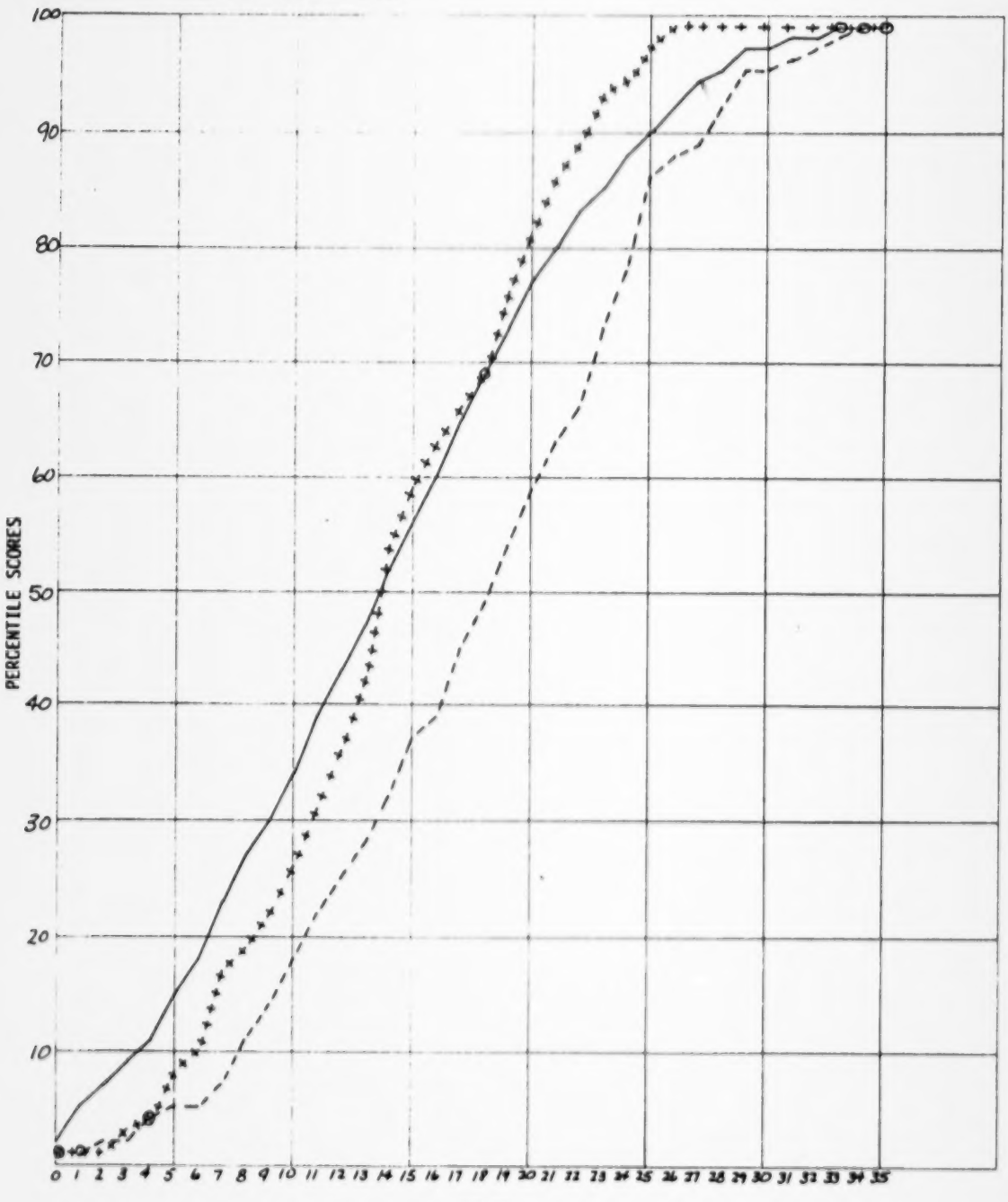
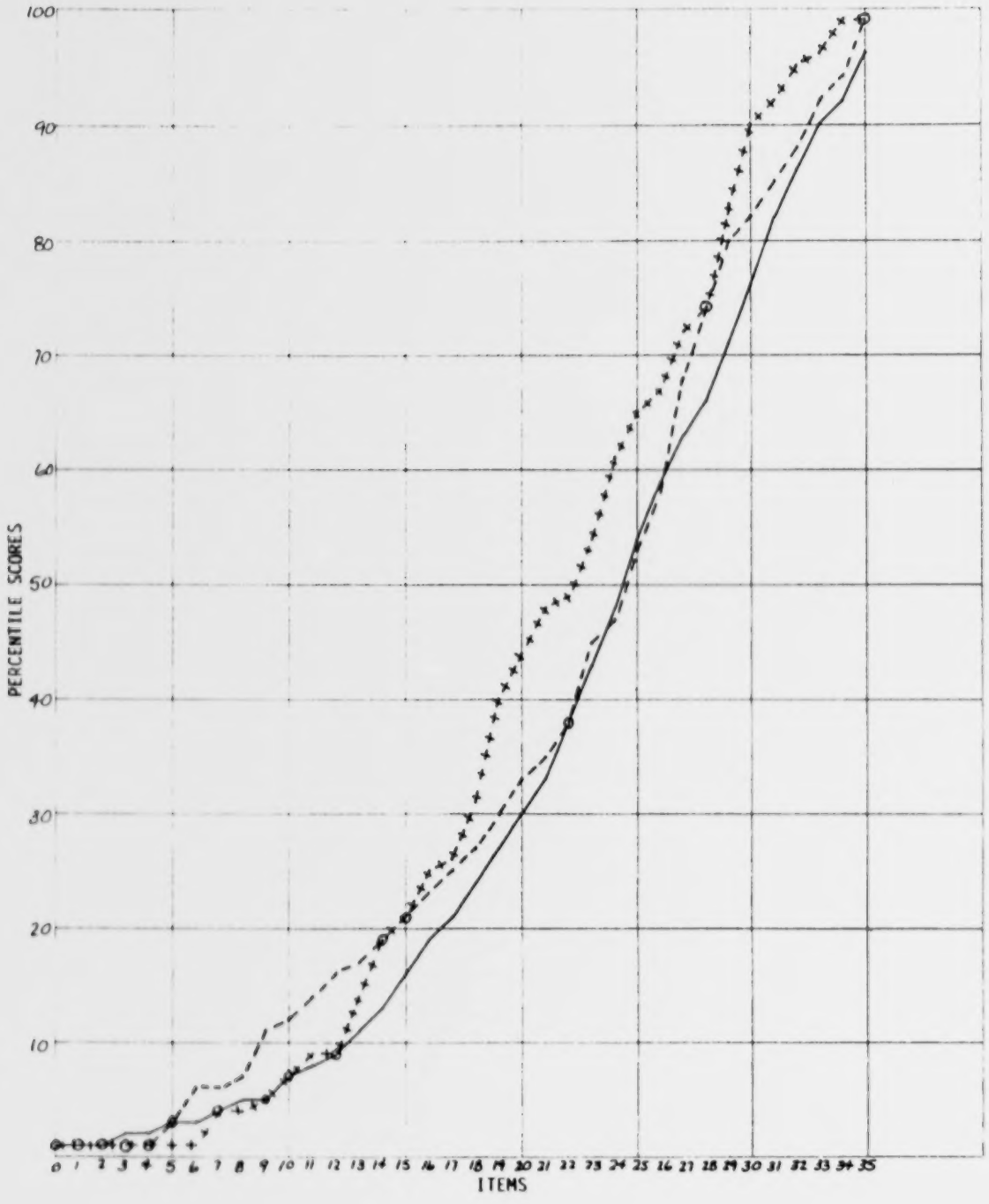


FIGURE 11
COMPARISON OF GROUP NORMS:
STAGE 3 - MANAGEMENT



FOUR YEAR ++++ FIVE YEAR -------- SoCQ_____

FIGURE 12
COMPARISON OF GROUP NORMS: STAGE 4 - CONSEQUENCE



FOUR YEAR ++++ FIVE YEAR -------- SoCQ_____

FIGURE 13
COMPARISON OF GROUP NORMS:
STAGE 5 - COLLABORATION

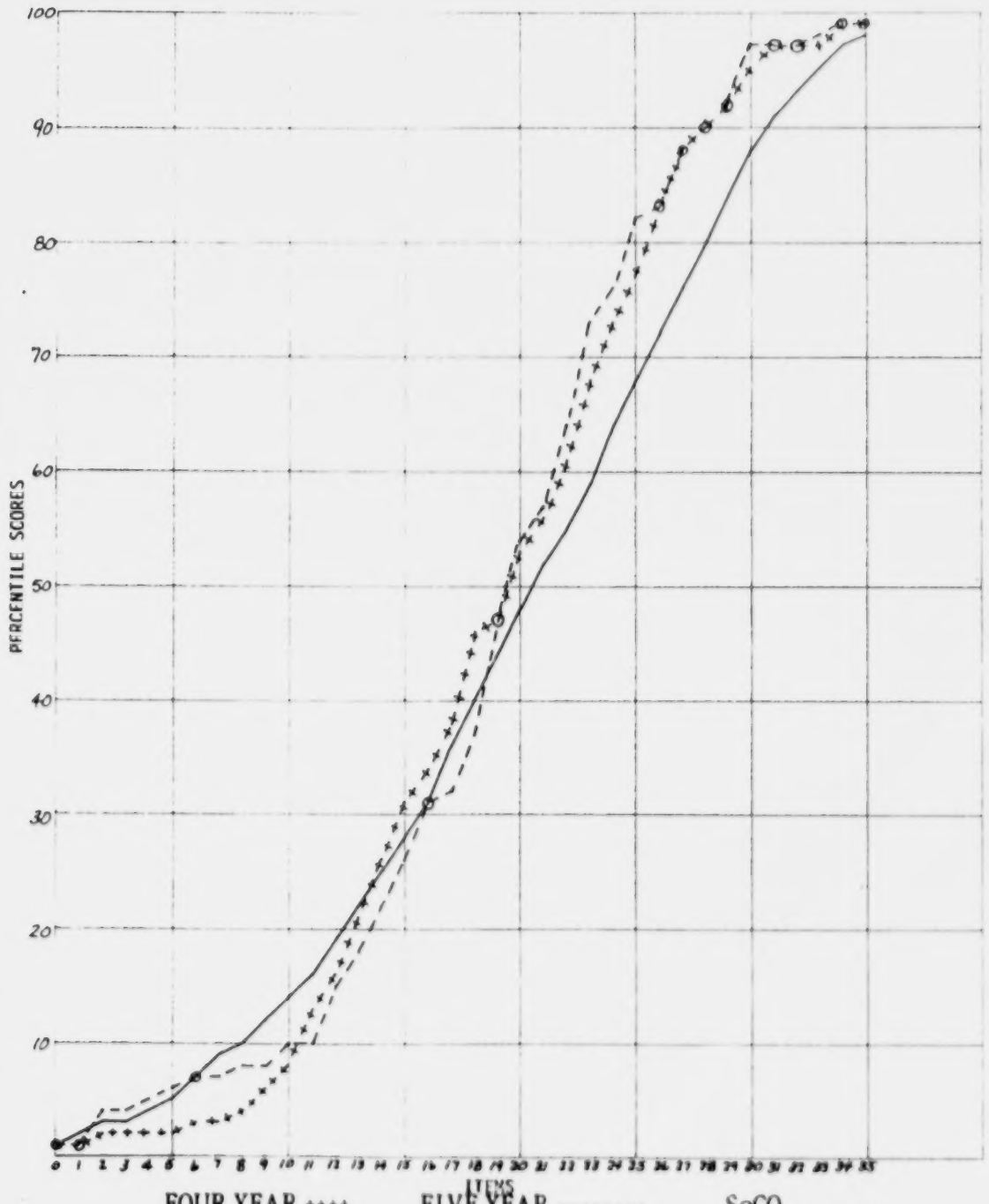
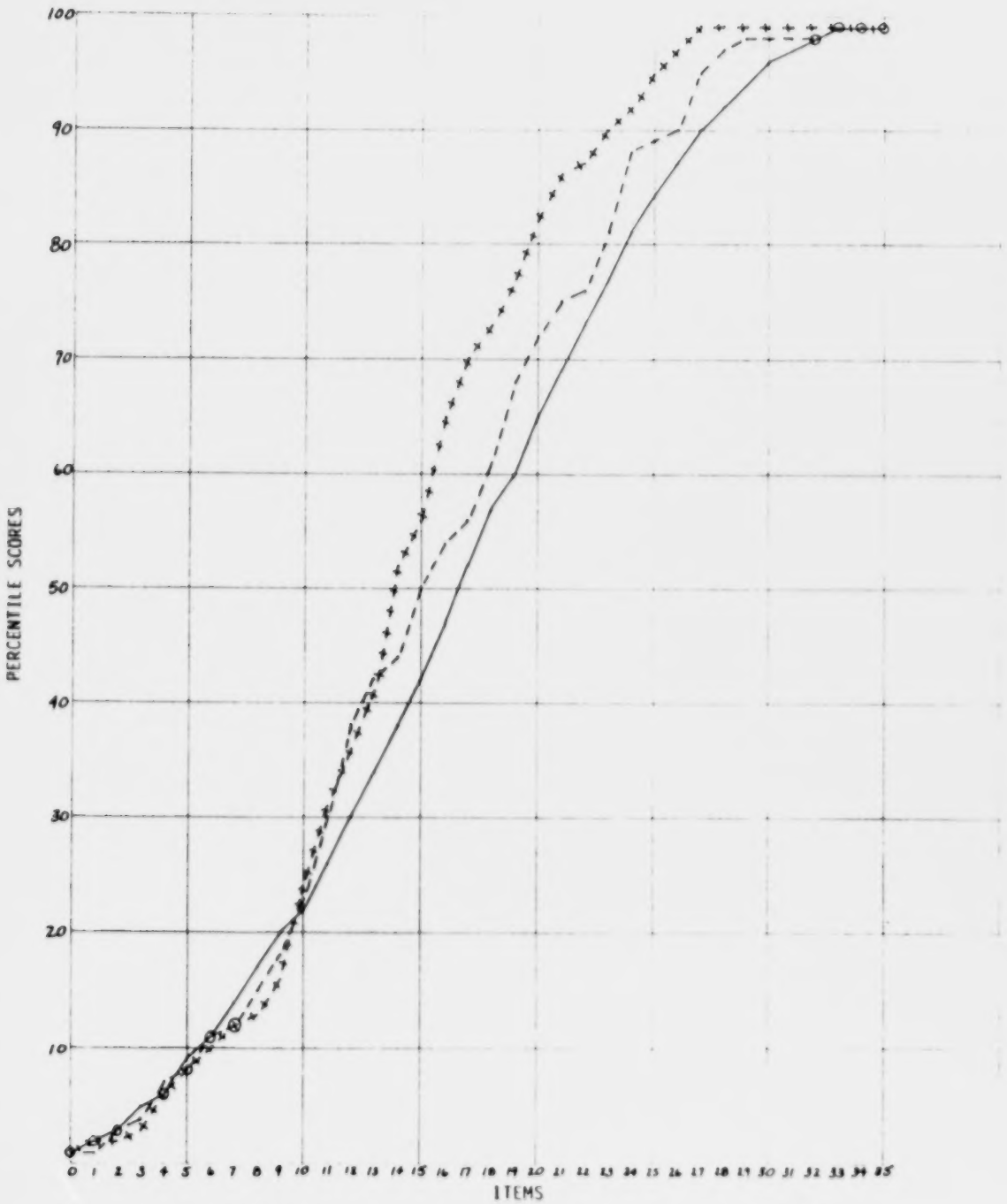


FIGURE 14
COMPARISON OF GROUP NORMS: STAGE 6 - REFOCUSING



FOUR YEAR ++++ FIVE YEAR -------- SoCQ_____

Figure 15

Comparison of inservice and preservice norms by stages

Raw Score	Five Item Percentiles for: Awareness Stage 0		Informational Stage 1		Personal Stage 2		Management Stage 3		Consequence Stage 4		Collaboration Stage 5		Refocusing Stage 6	
Total	Pres.[1]	Ins.[2]	Pres.	Ins.	Pres.	Ins.	Pres.	Ins.	Pres.	Ins.	Pres.	Ins.	Pres.	Ins.
0	6	10	6	5	1	5	1	2	1	1	1	1	1	1
1	13	23	17	12	1	12	1	5	1	1	1	2	1	2
2	20	29	23	16	2	14	1	7	1	1	3	3	2	3
3	31	37	28	19	4	17	2	9	1	2	3	3	3	5
4	47	46	33	23	8	21	4	11	1	2	3	4	6	6
5	55	53	38	27	10	25	6	15	2	3	4	5	8	9
6	61	60	42	30	13	28	8	18	3	3	5	7	11	11
7	69	66	46	34	16	31	12	23	5	4	5	9	12	14
8	72	72	50	37	17	35	15	27	6	5	6	10	14	17
9	75	77	51	40	21	39	18	30	8	5	7	12	17	20
10	80	81	53	43	25	41	22	34	9	7	10	14	23	22
11	85	84	57	45	28	45	26	39	12	8	13	16	30	26
12	89	86	59	48	30	48	31	43	13	9	16	19	37	30
13	91	89	61	51	34	52	35	47	15	11	20	22	41	34
14	93	91	64	54	37	55	39	52	16	13	23	25	41	38
15	95	93	68	57	39	57	46	56	20	16	26	28	48	42
16	97	94	70	60	42	59	50	60	22	19	30	31	55	47
17	99	95	72	63	48	63	54	65	25	21	33	36	61	52
18	99	96	74	66	50	67	58	69	27	24	38	40	61	57
19	99	97	76	69	55	70	61	73	30	27	46	44	66	60
20	99	98	78	72	59	72	68	77	37	30	51	48	75	65
21	99	98	82	75	63	76	72	80	40	33	55	52	78	69
22	99	99	85	80	66	78	76	83	43	38	60	55	81	73
23	99	99	88	84	70	80	81	85	47	43	67	59	84	77
24	99	99	90	88	73	83	86	88	51	48	72	64	89	81
25	99	99	91	90	78	85	90	90	57	54	77	68	91	84
26	99	99	93	91	81	87	93	92	62	59	80	72	93	87
27	99	99	94	93	85	89	94	94	68	63	85	76	96	90
28	99	99	97	95	89	91	96	95	73	66	89	80	98	92
29	99	99	98	96	92	92	97	97	77	71	97	84	99	94
30	99	99	98	97	93	94	97	97	82	76	94	88	99	96
31	99	99	98	98	95	95	97	98	88	82	96	91	99	97
32	99	99	99	99	97	96	99	98	90	86	97	93	99	98
33	99	99	99	99	99	96	99	99	96	90	97	95	99	99
34	99	99	99	99	99	97	99	99	99	92	99	97	99	99
35	99	99	99	99	99	99	99	99	99	96	99	98	99	99

[1] Preservice teacher data from subjects in factor analysis N = 192.

[2] Inservice teacher data from Hall, George, & Rutherford (1979).

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